3.7 GREENHOUSE GAS EMISSIONS

GREENHOUSE GAS EMISSIONS –Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

3.7.1 Environmental Setting

GHGs are defined as any gas that absorbs infrared radiation in the atmosphere. GHGs include, but are not limited to, water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). These GHGs lead to the trapping and buildup of heat in the atmosphere near the earth's surface, commonly known as the Greenhouse Effect. There is increasing evidence that the Greenhouse Effect is leading to global climate change. The potential adverse impacts of global climate change in California include: the exacerbation of air quality problems; a reduction in the quality and supply of water to the State from the Sierra snowpack; a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences; damage to marine ecosystems and the natural environment and an increase in the incidences of infectious diseases, asthma, and other human health-related problems (Health & Saf. Code, § 38501).

The primary source of GHG in the United States is energy-use related activities, which include fuel combustion, as well as energy production, transmission, storage and distribution. Energy related activities generated 84 percent of the total U.S. emissions on a carbon equivalent basis in 2012. Fossil fuel combustion represents the vast majority of the energy related GHG emissions, with CO_2 being the primary GHG.

The University of San Diego School of Law Energy Policy Initiative Center prepared a regional GHG inventory to examine emissions sources and levels in San Diego County, inclusive of the cities (County of San Diego Land Use and Environment Group 2013). The study concluded that transportation is the most important emissions sector for the State and San Diego region and accounts for a higher proportion of GHG emissions in San Diego compared to the State, while electricity-related emissions represent the same proportion relative to the State as a whole. Industrial and agricultural emissions are substantially less represented in San Diego County compared to the State. Within the City of Carlsbad, the largest GHG emissions sector is transportation (39%), followed by commercial and industrial (3%), residential (2%), solid waste (3%), and wastewater (1%) (City of Carlsbad 2015a).

3.7.2 Regulatory Setting

3.7.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3.7-1.

Table 3.7-1. Laws, Regulations, and Policies (Greenhouse Gas Emissions)

U.S.	Federal Clean Air Act (FCAA) (42 USC 7401 et seq.)	In 2007, the U.S. Supreme Court ruled that carbon dioxide (CO_2) is an air pollutant as defined under the FCAA, and that the USEPA has authority to regulate Greenhouse Gas (GHG) emissions.
CA	California Global Warming Solutions Act of 2006 (AB 32)	Under AB 32, CARB is responsible for monitoring and reducing GHG emissions in the State and for establishing a statewide GHG emissions cap for 2020 that is based on 1990 emissions levels. CARB (2009) has adopted the AB 32 Climate Change Scoping Plan (Scoping Plan), which contains the main strategies for California to implement to reduce CO_2 equivalent (CO_2e) emissions by 169 million metric tons (MMT) from the State's projected 2020 emissions level of 596 MMT CO_2e under a business-as-usual scenario. The Scoping Plan breaks down the amount of GHG emissions reductions the CARB recommends for each emissions sector of the State's GHG inventory, but does not directly discuss GHG emissions generated by construction activities.
CA	Senate Bills (SB) 97 and 375	• Pursuant to SB 97, the State Office of Planning and Research prepared and the Natural Resources Agency adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. Effective as of March 2010, the revisions to the CEQA Environmental Checklist Form (Appendix G) and the Energy Conservation Appendix (Appendix F) provide a framework to address global climate change impacts in the CEQA process; State CEQA Guidelines section 15064.4 was also added to provide an approach to assessing impacts from GHGs. • SB 375 (effective January 1, 2009) requires CARB to develop regional reduction targets for GHG emissions, and prompted the creation of regional land use and transportation plans to reduce emissions from passenger vehicle use throughout the State. The targets apply to the regions covered by California's 18 metropolitan planning organizations (MPOs). The 18 MPOs must develop regional land use and transportation plans and demonstrate an ability to attain the proposed reduction targets by 2020 and 2035.
CA	Executive Orders (EOs)	EO B-30-15 (Gov. Brown, April 2015) established a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 to ensure California meets its target to reduce GHG emissions to 80 percent below 1990 levels by 2050. It also directed all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to reduce GHG emissions to meet the 2030/2050 targets.
		Under EO S-01-07, which set forth a low carbon fuel standard for California, the carbon intensity of California's transportations fuels is to be reduced by at least 10 percent by 2020.
		EO S-3-05 established statewide GHG emission targets of reducing emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below the 1990 level by 2050.

3.7.2.2 Local

The County of San Diego (2012) adopted a Climate Action Plan (CAP) in June 2012 to address the issues of growth and climate change through meaningful GHG emissions reductions consistent with Assembly Bill (AB) 32, Governor's Executive Order S-3-05, and the State CEQA Guidelines. The County's CAP includes a GHG emissions inventory and forecast, GHG reduction targets, community and local government measures and actions to reduce GHG emissions, and monitoring procedures.

The City of Carlsbad (2015a) adopted a CAP in September 2015 that: is designed to reduce City GHG emissions and streamline environmental review of future development projects in the City; anticipates development within the City consistent with the recently updated General Plan; and includes an emissions inventory and GHG forecasts which are compared to GHG reduction targets. As reported in the City's CAP, the City is forecast to meet emission targets in 2020 with: (1) implementation of state and federal actions; (2) General Plan Land Use and roadways; and (3) additional General Plan policies and actions. However, to address an emissions gap in 2035, this CAP includes GHG reduction measures to close the gap between forecast emissions and emission targets in 2035. These measures focus on incorporating elements (e.g., photovoltaic systems, energy efficiency retrofits, transportation demand management, water utility system improvements) into proposed development to reduce GHG emissions. With these measures, the City's CAP meets emission targets for 2020 and 2035.

3.7.3 Impact Analysis

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. In October 2008, the CARB created a Preliminary Draft Staff Proposal, *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*. In this document, the CARB discusses the dangers of global climate change and the need for a defined set of significance thresholds for operations, construction, and transportation, and provides a preliminary proposal for a threshold of significance for GHG emissions. The threshold consists of a quantitative threshold of 7,000 metric tons (MT) of CO_2 equivalent (CO_2e) per year ($MTCO_2e$/year) for operational emissions (excluding transportation) and performance standards for construction and transportation emissions. The goal of this effort is to mitigate GHG emissions from industrial projects on a statewide level. Over time, implementation of AB 32 will reduce or mitigate GHG emissions from industrial sources.

San Diego County Air Pollution Control District Rule 60.1 identifies de minimis emissions for small stationary sources, including 20,000 tons per year of GHGs (CO_2e).

This de minimis emissions rate is used as a threshold of significance for the Project overall. The City of Carlsbad CAP includes the following project screening threshold: "the City has determined that new development projects emitting less than 900 $MTCO_2e$ annual GHG would not contribute considerably to cumulative climate change impacts, and therefore do not need to demonstrate consistency with the CAP." This threshold is applied to the Project exclusive of the offshore components. Project-generated GHGs (primarily engine exhaust) would come from marine vessels and onboard equipment, heavy-duty construction equipment, transfer dump trucks, cement trucks, and worker vehicles (Table A2-1 in Appendix A). Approximately 1,725 $MTCO_2e$ would be generated over the Project duration, as shown in Table 3.7-2, with peak emissions (1,200 $MTCO_2e$ per year) anticipated from September 2016 through August 2017.

Table 3.7-2. Estimated Greenhouse Gas Total Project Emissions

AIR EMISSIONS SUMMARY		CO_2	N_2O	CH_4	$MTCO_2e$
Pre-Survey	Pounds/Segment	6,689.55	0.17	0.49	**3.06**
	English Tons	3.34	0.00	0.00	
Onshore Decommissioning	Pounds/Segment	372,261.00	9.56	21.20	**244.44**
	English Tons	267.13	0.01	0.01	
Offshore Decommissioning	Pounds/Segment	2,062,695.77	52.83	134.57	**950.93**
	English Tons	1,038.65	0.03	0.7	
Beach Decommissioning	Pounds/Segment	315,755.43	8.08	17.99	**190.17**
	English Tons	207.75	0.01	0.01	
Surf Zone Decommissioning	Pounds/Segment	652,325.25	16.71	41.96	**332.21**
	English Tons	362.87	0.01	0.02	
Post-Survey	Pounds/Segment	6,689.55	0.17	0.49	**3.06**
	English Tons	3.34	0.00	0.00	
Total – Project Air Emissions (English Tons/Year)		**1,883.09**	**0.05**	**0.11**	**-**
Peak English Tons/Year[1]		**1,312.47**	**0.03**	**0.08**	
Total – Project Air Emissions					**1,723.88**
Total Peak $MTCO_2e$					**1,201.50**

[1] The Project years considered in estimating Peak Tons/Year are provided in Table A1-1 in Appendix A (September 2016 through August 2017).

As described in Section 2, Project Description, there are two proposed methodologies (Options 1 and 2) to complete decommissioning activities in both the surf zone and offshore segments. Although in-field success would determine which method is more effective and thus used, the options with the highest emissions are presented in Table 3.7-2 and in Appendix H.

GHG emissions were estimated for motor vehicles utilizing load factors from the CalEEMod Model and emissions factors from Tables C.3 and C.4 of the California Climate Action Registry (CCAR) General Reporting Protocol (CCAR 2009). GHG emissions were estimated for heavy equipment and vessels utilizing load factors from the OFFROAD model and the Port of Long Beach 2010 Emissions Inventory Table 3.3

(POLB 2011), with emissions factors from Table C.3 and C.6 of the CCAR General Reporting Protocol (CCAR 2009).

As indicated in Table 3.7-2, Project-related GHG emissions would not approach nor exceed the 20,000 $MTCO_2e$ per year significance threshold for San Diego County; therefore, impacts associated with GHGs would be less than significant. Additionally, Project-related emissions for the combined onshore, beach, and surf zone decommissioning segments would total 766.82 $MTCO_2e$, which is less than the 900 $MTCO_2e$ threshold in the City of Carlsbad's CAP. As a result, the Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; therefore, the impact would be less than significant.

Although no mitigation is required, implementation of **APM AIR-1: Air Emissions Compliance Program**, **APM AIR-2: Low-Emission Engines – Offshore**, **APM AIR-3: Low-Emission Engines – Onshore**, **APM AIR-4: Mobilize from Nearest Port**, **APM AIR-5: Dispose Materials at Nearest Port**, and **APM AIR-6: Low-Sulfur Fuel** would further reduce this less than significant impact, as would **MM TRA-2: Carpooling** (for the latter, see Section 3.16, Transportation/Traffic).

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. As described under item ***a)*** above, Project-related emissions associated with Project components (onshore, beach, and surf zone decommissioning segments) within the City are less than the 900 $MTCO_2e$ threshold in the City of Carlsbad's CAP. Because Project-related emissions would be short-term and cease upon Project completion, GHGs from decommissioning activities would not conflict with any county or state policy to reduce GHG emissions, including Executive Orders S-3-05, S-01-07, and B-30-15. Therefore, the Project would not conflict with any applicable plan, policy, or regulation adopted for the purposes of reducing GHG emissions.

3.7.4 Mitigation Summary

The Project, which includes implementation of the air quality APMs listed below, would not result in significant GHG emissions impacts; therefore, no mitigation is required.

- APM AIR-1: Air Emissions Compliance Program.
- APM AIR-2: Low-Emission Engines – Offshore.
- APM AIR-3: Low-Emission Engines – Onshore.
- APM AIR-4: Mobilize from Nearest Port.
- APM AIR-5: Dispose Materials at Nearest Port.
- APM AIR-6: Low-Sulfur Fuel.
- MM TRA-2: Carpooling.